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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,387	03/03/2004	Hiroaki Takahata	Q80091	3528

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WASHINGTON, DC 20037

EXAMINER

ZEMEL, IRINA SOPHIA

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 11/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,387

Applicant(s)

TAKAHATA ET AL.

Examiner

Irina S. Zemel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 13-5, and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka '147 in combination with US Patent 4,384,032 to Tashiro et al., (hereinafter "Tashiro") or US 4,638,015 to Bertrand (hereinafter "Bertrand").

The disclosure of Tanaka '147 is discussed in the previous office action. As discussed, among the suitable thermally decomposable materials, the reference lists several chemical compounds, which have decomposition temperatures both below and above 190 C, for example sodium bicarbonate or azobacbonamide. See list in column 3, lines 33-43. The reference further expressly discloses use of more than one thermally decomposable blowing agent (see, for example, illustrative embodiment 1). While not specifically disclosing citric acid as a suitable blowing agent, citric acid is a known blowing agent for polyolefin based foams and is conventionally used by itself or in combination with other decomposable blowing agents, such as azobisbutyronitrile and sodium bicarbonate. See illustrative examples of Tashiro and column 2, lines 32-39 of Bertrand. Therefore, use of the claimed citric acid in place or in combination with Tanaka's expressly disclosed blowing agent would have been obvious for its functional equivalency and as conventionally used in combination with the disclosed blowing agents with reasonable expectation of success. Furthermore, citric acid is a notoriously

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known nucleating agent for thermoplastic foams, which makes its use in polyolefin foams obvious for its known function.

The invention as claimed, thus, would have been obvious from the combined disclosure of the cited references and choosing the components that fully correspond to the claimed components and their combinations from the list of expressly disclosed components or their functional equivalents would have been obvious with reasonable expectation of adequate results absent showing of unexpected results.

Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka in combination with EP 0928805 to Montell North America Inc., (hereinafter "Montell") and further in combination with Bertrand or Tashiro.

The disclosure of Tanaka '147 and Montell are discussed in detail in the previous office action. See discussion above for obviousness of using the claimed blowing agent, i.e., citric acid.

Claims 1, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka '111 in combination with US Patent 4,384,032 to Tashiro et al., (hereinafter "Toshiro") or US 4,638,015 to Bertrand (hereinafter "Bertrand").

The disclosure of Tanaka '111 is discussed in the previous office action. As discussed, among the suitable thermally decomposable materials, the reference lists several chemical compounds, which have decomposition temperatures both below and above 190 C. See list in column 3, lines 27-47 where the reference further expressly discloses use one or more than one thermally decomposable blowing agent in combination. Thus, choosing two blowing agents from the list of expressly disclosed

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compounds would be obvious with reasonable expectation of adequate results, absent showing of unexpected results that can be clearly attributed to two claimed components with specific decomposition temperatures. While not specifically disclosing citric acid as a suitable blowing agent, citric acid is a known blowing agent for polyolefin based foams and is conventionally used by itself or in combination with other decomposable blowing agents, such as azobisbutyronitrile and sodium bicarbonate. See illustrative examples of Tashiro and column 2, lines 32-39 of Bertrand. Therefore, use of the claimed citric acid in place or in combination with Tanaka's expressly disclosed blowing agent would have been obvious for its functional equivalency and as conventionally used in combination with the disclosed blowing agents with reasonable expectation of success. Furthermore, citric acid is a notoriously known nucleating agent for thermoplastic foams, which makes its use in polyolefin foams obvious for its known function.

The invention as claimed, thus, would have been obvious from the disclosure of Tanaka '111 and choosing the components that fully correspond to the claimed components and their combinations from the list of expressly disclosed components or their functional equivalents would have been obvious with reasonable expectation of adequate results absent showing of unexpected results.

Response to Arguments

Applicant's arguments with respect to claims 1, 3-9 have been considered but are moot in view of the new ground(s) of rejection.

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As far as using specifically claimed citric acid as the blowing agent, obviousness of using citric acid in combination with, for example, sodium bicarbonate, is discussed above.

Applicants should note that claims 7-9 contain improper claim identifier as those claims have been previously presented and examined.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

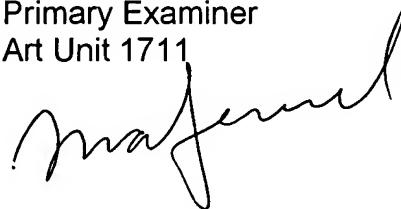
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Irina S. Zemel
Primary Examiner
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ISZ